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A TRUE FRIEND OF THE FARMER.

By Dr. R. W. Shufeldt.

We HAVE in the United States a great many species of owls, and they range in size all the way from the little Elf and Pigny Owls of the West, the smallest of which are under six inches in length, to the more powerful varieties seen in our Alaskan Great Gray Owl, which frequently exceeds two feet in length; or, a bird that is more familiar to all of us, our Great Horned Owl, which has a total length of nearly, or about, two feet, thus almost equaling in size the Great Gray Owl. In popular parlance, there have not been many names bestowed upon these interesting birds, as all the larger kinds with feather "ear-tufts" are usually called "Cat Owls," the smaller kinds being named "Screech Owls," and, finally, the little Pigny have been popularly christened "Sparrow Owls."

From his peculiar physiognomy, the particular owl I desire to bring to the notice of the readers of THE AMERICAN FARMER has quite universally received the name of "The Monkey-Faced Owl." This sobriquet is enough, at the outset, to prejudice most people against his owlship, and, so far as the writer is concerned, there has never been observed by him enough of the monkey in the face of the bird to have it deserve the name. All we can say is, that if there be a monkey in the whole of monkeydom that can claim to be as good looking as this owl is positively handsome, he may consider himself very fortunate.

The current English name among scientists and all others interested in ornithology for this species is

THE AMERICAN BARN OWL

and it thus distinguishes it from the European species, which it very closely resembles. It is a larger bird, however, and other species very near akin to it are found in many parts all over the world. Science has given the name of *Strix pratincola* to our American bird—the Latin word *Strix*, or the generic name, being the ancient term for any screech owl, as *strido* means I screech or utter strident or shrill sounds. The specific name, *pratincola*, also Latin, refers to an inhabitant of the fields, and it is applicable to this species, inasmuch as it frequently hunts in such places for its food.

As I have said above, our Barn Owl is a handsome fellow, soft in plumage, not at all unpleasing in form, and with a history almost as old as that of man himself. He is by no means an uninteresting subject. One of our popular ornithologists thus describes his appearance:

Above, including upper surfaces of wings and tail, tawny, fulvous, or orange-brown, delicately clouded or marbled with ashy and white, and dotted with blackish, sometimes also white; such marking resolved, or tending to resolve, into four or five bars of dark mottling on the wings and tail. Below, including lining of wings, varying from pure white to tawny, ochre, or fulvous, but usually paler than the upper parts and dotted with small but distinct blackish specks. Face varying from white to fulvous or purplish-brown; in some shades as if stained with claret; usually quite dark or even black. About the eyes and the border of the disk, dark brown.

The birds vary much in coloration, but I am thus particular in

DESCRIBING HIS PLUMAGE, as I will soon show that it is highly important that every farmer in the land who has any regard for his interests ought to know this species, and know it well. It has a length averaging between 15 and 17 inches, and the young birds are covered with fluffy, white down.

Speaking of the young calls up the

the bird to cover them all. When taken down finally and examined it was found they were all rotten, caused no doubt, by the intense heat from the sun's reflection on the tin roof." It is in Europe, however, that everything pertaining to the weird and the uncanny has been interwoven with the entire history of the congener of our Barn Owl. They call their bird the Screech Owl, and there are plenty of superstitious people that believe—

"When screech owl croak upon the chimney-top, it's certain then you of a curse shall hear."

And we all remember that Gray, drawing it true to nature, remarked—

"From yonder ivy-mantled tower, The moping owl doth to the moon complain Of such as wandering near her secret bower, Moles her anoint, solitary reign."

But I am passing from the practical to the romantic, and we must task back on the former course sharp now or all our lee room will be expended.

Now, and it pains me to record the fact, it is the common

PRACTICE ALL OVER THIS COUNTRY for farmer lads and for thoughtless persons everywhere who may be "out with a gun" to shoot this owl on sight. Hundreds of these birds are thus destroyed every year that goes by. Many are thus killed by the curious who have no other object in view save for a moment or so to examine its beautiful plumage or to have the opportunity to more closely inspect its odd appearance. But the farmer when asked for a reason must offer a better excuse than this amounts to, and he, as a rule, brings up in extenuation the old, time-worn plea that the owl destroys his young chickens. The mistake here is that he arraigns all owls on the same charge and, unfortunately, takes no care to discriminate among them, and by so doing murders one of his very best friends every time he takes the life of an American Barn Owl.

Permit me, in support of this statement, to call into court two most trustworthy witnesses, one of our own country and one of England. Waterston, the distinguished British naturalist and explorer, once kept a large colony of the Old-World species of this owl at his

bats, frogs, small reptiles, grasshoppers, and beetles. Very rarely small birds are caught by them, and occasionally a young rabbit varies the usual bill of fare. Looked at from an economic standpoint, it would be difficult to point out a more useful bird than this owl, and it deserves the fullest protection; but as is too often the case, man, who should be its best friend, is generally the worst enemy it has to contend with, and is ruthlessly destroyed by him." And, further on: "The number of rats, mice, and other noxious vermin required by a pair of these owls to feed their family, usually consisting of from five to seven young, is almost incredible, and I am certain exceeds the captures of a dozen cats for the same period. The young owlets are always hungry, and will eat their own weight in food daily, and even more if they can get it."

In Southern California these birds sometimes occur in flocks of 50 or more, a thing I have never seen in the East. All this being as true as it is, it would practically seem to be the thing not only not to destroy these owls, but in some localities where rats, field mice, pocket gophers, and other real enemies of the farmer threaten him as a dangerous pest, it would be a wise move to encourage their presence in every possible way, or even to capture and import them from points where they are numerous and the country but as yet thinly settled. A colony of these owls inhabiting some rookery in the neighborhood of one's grain fields, instead of being a menace to the farmer's interests, are, on the contrary, a positive benefit to a man. They are quite as much deserving of his protection as is the faithful dog that guards his flock and barn.

INSECT PESTS.

The Invasion of Plant Lice in New York.

Prof. J. A. Lintner, State Entomologist of New York, writes THE AMERICAN FARMER, under date of May 22, as follows, in regard to the alarming visitation of plant lice:

The remarkable abundance of these destructive little pests on the opening buds and tender leaves of fruit trees in the State of New York this Spring is exciting a great deal of interest and considerable apprehension among fruit growers. The apple tree has been particularly infested, the insect occurring on it, the *Aphis malii*, being one that multiplies under favoring conditions in excessive numbers, entirely covering twigs and standing one on another, and sucking out all the sap until the parts attacked are blighted.

From some portions of the State reports have reached me of the opening buds of apple trees being literally covered with these plant lice or *Aphides*, as they are scientifically known. As the reports have come from eastern, central, and northern Counties, it would appear as if the condition was general throughout the State. Whether it also extends to adjoining and other States is at yet unknown to me.

To inquiries made of the probable effect on the coming fruit crop of this attack, I have replied that it was unusually severe, and apparently exceeded anything that we had experienced since the year 1886, when the superabundance of plant lice of different species inflicted serious losses, and the hop aphid almost destroyed the hop crop of the State of New York. It was therefore desirable that fruit growers should spray their trees at once with kerosene emulsion, strong soap suds, or tobacco water, and not wait until the *Aphides* have greatly multiplied and found shelter within the curled leaves where the insecticide would not reach them. A long, cold rain following in a week or 10 days the appearance of the insect would probably be quite as beneficial as the spraying recommended, if we could judge from observations in preceding years, but, of course, this provisional aid could not be counted upon.

Since then we have had throughout the State heavy rains, continuing with more or less intermission, amounting to from two to three inches of fall. It was not a cold rain, however, and judging from a few reports since received (I have not been able to make personal observations) it failed to prove very efficient in the desired direction, for the apple aphid is said to be as abundant as before.

Our hop growers also are feeling considerable anxiety, for the same conditions that favor an unusual number of the apple aphid would naturally tend to the multiplication of the hop aphid, as was so markedly illustrated in 1886.

The hop growers have therefore been advised to keep close watch for the first appearance of the hop aphid on the upper leaves of the outer rows of their hop yards. They will probably be seen about the last of May or the first of June as full-grown, winged females, which have just flown from neighboring plum trees where the winter had been passed in the egg and the early Spring as wingless females.

If these, the mothers and progenitors of a number of successive broods through the summer, are killed at this time by proper spraying with suitable insecticides, in the proportion that they are destroyed will subsequent injury to the crop be prevented?

It is said that in England the hop growers do not attempt to grow a hop crop without their regular "hop washings," which we call spraying.

A WONDERFUL DISPLAY.

The Exhibit of the Department of Agriculture at the World's Fair.

A DVANTAGEOUSLY situated in the northeast portion of the Government Building, the exhibit of the United States Department of Agriculture is to be found, in many respects the most interesting as well as the most scientific of the displays made by any branch of the Government. The work of preparing and installing this exhibit has been under the personal supervision

after its arrival on our shores. Microscopes specially detailed show the method of inspecting pork for the trichina worm. A fine collection of pathological specimens in alcohol and models of the various diseases of domestic animals, as well as a collection of the bacteria producing the diseases, is to be found. Models are shown of some of the latest and most improved specimens of ship and car building, showing the care now taken for the comfort of live stock in transit.

A HORSESHOE EXHIBIT demonstrates the right and wrong way to shoe a horse. Horse owners will do well to examine this carefully. The shoes worn by some of the record breakers when they made their names are for inspection.

The Chemical Division conducts an actual working laboratory of the most

approved fashion for investigations

solutions to several perplexing questions may be solved right here. The colorings of the different mushrooms are very attractive, and furnish a surprise to the majority of visitors.

The Forestry Division justly receives a large share of praise for its effectual showing. This includes the exhibit of metal railroad ties adopted by the different countries, together with the various methods for preserving wooden ties and wood-saving devices. In addition are exhibited specimens of the important metal tie patents. The turpentine industry is interestingly shown by tapped trunks of the Long-leaf or Southern pitch pine and the products made therefrom; in fact, with the trunks and growing pine seedlings of various ages, a most satisfactory representation is made of a turpentine orchard. All grades of crude and refined turpentine and rosins are advantageously displayed on a column stand. A few of our native and



THE AGRICULTURAL HALL AT THE WORLD'S FAIR.

foreign finishing woods are shown in A MOST BEAUTIFUL PAGODA, consisting of 12 columns of handsomely veneered and carved wood. An electrical center piece, with four transparent lanterns, is beautifully designed and constructed of various colored thin sections of wood, all being illuminated by means of electric lamps. A large, octagonal seed column may be seen filled with seeds from the different trees indigenous to the United States, and around its broad terraced base is arranged a collection of living conifers of different ages. Another attractive feature of the forestry display is a series of 20 large monographs—frames with heavy fillets cut from mature trunks of each species. Within the same species are illustrated by botanical specimens, photomicrographs, and maps showing geographical distribution.

foreign finishing woods are shown in connection with the kinds of food and their adulterations and other studies of interest to the agriculturist. Sugar beets, their cultivation and manufacture, is made a feature of the exhibit. The instruments and apparatus in use are models of their kind.

The display of the Division of Entomology may be divided into five sections, illustrating, respectively, the injurious species of insects, insecticides, and apparatus for applying the same, systematic and biologic collections, apparatus and method employed in collecting, preparing, and rearing insects, and illustrations and maps. Each one of these divisions is an exhibit by itself of great interest. In this section are models of living conifers of different ages. Another attractive feature of the forestry display is a series of 20 large monographs—frames with heavy fillets cut from mature trunks of each species. Within the same species are illustrated by botanical specimens, photomicrographs, and maps showing geographical distribution.

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THROUGH FIRE TO WIN.

THE greatest case of feminine bravery and devotion that ever came under my notice, said my friend, who had been a prominent detective in his day, was that of Margaret Whitney, the daughter of the doorkeeper of Messrs. Bangshaw Brothers, bankers.

On the eventful night in question Margaret's father had been sent out on business for the firm, and she was the sole occupant of the rooms in which they dwelt, directly over the bank.

She had fallen asleep on a lounge, and was aroused by the sound of stealthy approaching feet over the carpeted stairway, just outside the door. She arose hurriedly and with a sudden impulse she threw the door wide open. She no sooner had done so than two masked men suddenly sprang upon her. The light was dashed from her hand, their strong arms held her in a vice-like grip, and before she could utter a cry a voice whispered:

"Make the slightest noise and you are a dead woman! Do as you are told and no harm shall befall you."

Margaret Whitney was as brave as steel. She felt the cold muzzle of a pistol pressed against her forehead, but she accepted the situation at once, and retaining perfect self-control, she replied in a low voice:

"Only release me and tell me what it is I must do."

They released her, after a moment's consultation, and relighted the candle, by which she could see that their faces were covered with black crepe veils in which holes were cut for the eyes and mouth; and they seemed shod with some felt-like material that deadened the sound of their footsteps considerably.

One of the men quickly and silently searched the room, while the other stood guard over her. The former presently returned, dangling a bunch of keys.

"Whose keys are these, and what do they open?" was asked the girl, in a low, commanding voice.

"They are my father's keys," said Margaret, "and they open the different rooms and places down stairs."

"Do they open the cellar and the strong box in which the money is kept?"

"No; one passkey is in the possession of the elder Mr. Bangshaw, the other is in the possession of Mr. Hosea, the cashier. No one can obtain admission to the cellar during their absence."

"Come down stairs with us," said the man holding immediate guard over her.

As they went down the lower flight Margaret was surprised to see another figure—that of a woman, who was clothed in a dark mantle from head to foot—who further lighted their progress down with the slender ray of a lantern in her hand.

"Is it not possible," said Margaret's chief captor, when they had reached the foot of the stairs, "that one or other of the passkeys may be locked in the desk of their private office."

"It is possible, but not likely," was the calm reply.

At the leader's command Margaret pointed out the key that opened the door of the private office, and the desk at which the Bangshaw Brothers generally sat, one facing the other.

A small jet of gas, commonly used for melting sealing-wax, was then lighted; a bag, containing a number of house-breaking implements, swathed in thick folds of flannel, was next produced; and the desk drawers were speedily forced open and searched. But no key was to be found.



SHE WAS AROUSED BY THE SOUND.

The leader consulted in whispers with his companions a moment, and then requested Margaret to point out the key that opened the top cellar door, saying that they would have to burst open the lower one. She indicated the proper key, when he resumed:

"I must compliment you on your sensible conduct in this affair. Now, however, you must excuse me if I am compelled to make you a prisoner for awhile. Dear friend, the card."

The last words were addressed to the masked woman, who up to this time had been a mere looker on, but who now started into sudden activity.

She placed Margaret with her back to a large iron pillar which supported the ceiling, and then, producing from some hidden pocket a coil of long, thin cord, she proceeded to tie Margaret firmly to the pillar.

Her arms were left at liberty till the last, when they were bound together at the wrists with a band of some strong woven stuff, which held them as securely as if they had been riveted there.

"You see, I could not cause you unnecessary pain," said the courteous burglar, when all was made fast; "and to have fastened your arms down to

your sides for a couple of hours would have been the refinement of cruelty."

"But one point still remains. You must give me your word of honor that you will not cry out, nor in any way call for assistance while here; otherwise I shall be under the unpleasant necessity of having you gagged."

"I give you my word," assented the doorkeeper's daughter, after a moment of silent thought, "not to cry out while I remain here."

She began to breathe more freely when they left her to herself, as they now at once did, with no other company than the tiny, faintly-burning gas jet already mentioned, by which she could just make out the familiar features of the old-fashioned but richly-furnished private office of the banker brothers.

A few desperate efforts to free herself only served to convince her of their futility. Then she resigned herself to the palpitation of her own heart as she proceeded.

She reached the bottom of the steps, 15 in, without causing them to turn a look.

The next difficulty was to pick up the keys, which were threaded on a steel ring, without detection.

Even this difficulty was conquered at last. She took the keys up from the floor without so much as a rustle, and had proceeded three steps on her perilous upward journey, when there was a sharp report of a pistol, and, as Margaret set foot on the topmost step, she felt something strike her near the shoulder-blade.

But she staggered forward into the corridor, wheeled quickly around, and flung herself—head, arms, body—against the oaken door, which, yielding to her strength, turned on its well-oiled hinges and, with a little triumphant click, shut up, as in a trap, the three thieves below.

Without the key this door, which locked itself when pushed, could neither be opened from one side or the other; with the key it could be opened on either side.

She had hardly closed it securely before she heard the two men inside tearing and beating at it like madmen in their desperate efforts to get out.

Still holding her bunch of keys, she ran out of the office and down a passage that led to the side entrance of the bank. She was trembling all over now, and had hardly strength enough remaining to unfasten the heavy outer door.

At last she sped down the silent street in search of assistance. Fortunately, upon reaching the first corner she nearly stumbled into the arms of a policeman, who was coming from the opposite direction.



EVEN THEN SHE DID NOT FALTER.

Many dreary minutes passed and her cramped attitude and the tightness of the cords that bound her gradually caused her such intense pain that she could scarcely refrain from crying out.

Suddenly, in the midst of her torture, a thought flashed into her brain that left no room for anything else but surprise and delight. There right before her eyes was suddenly revealed to her at one glance a sure and speedy mode of escape.

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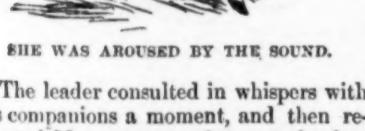
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strange-looking implement, the like of which Margaret had never seen before; while the woman was lighting these operations with a lamp held aloft in one hand. These had their backs to the staircase.

This entire picture Margaret's eyes took at a glance. They took in one thing more—the bunch of keys with which they had opened the door at the head of the stairs.

This bunch of keys was lying on the lower landing, close to the cellar door that had been forced open. Could she but obtain possession of it, she saw not a way of escape for herself, but a way by which the thieves might be caught in their own trap.

The peril was tremendous! the chances apparently but one in a hundred of her being able to creep down so softly as not even to cause them to turn a glance in her direction (which, of course, would seal her fate), and then creep back with the keys and close the trap upon them by means of the heavy spring-lock door at the top.

But it was the only course open to her, desperate as it was, and she adopted it with characteristic boldness and fearlessness.

Slowly, inch by inch, and with no more than a shadow, she stole into the doorway, and then down the staircase, step by step, counting them one by one by the palpitation of her own heart as she proceeded.

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EVEN THEN SHE DID NOT FALTER.

Many dreary minutes passed and her cramped attitude and the tightness of the cords that bound her gradually caused her such intense pain that she could scarcely refrain from crying out.

"They are my father's keys," said Margaret, "and they open the different rooms and places down stairs."

"Do they open the cellar and the strong box in which the money is kept?"

"No; one passkey is in the possession of the elder Mr. Bangshaw, the other is in the possession of Mr. Hosea, the cashier. No one can obtain admission to the cellar during their absence."

"Come down stairs with us," said the man holding immediate guard over her.

As they went down the lower flight Margaret was surprised to see another figure—that of a woman, who was clothed in a dark mantle from head to foot—who further lighted their progress down with the slender ray of a lantern in her hand.

"Is it not possible," said Margaret's chief captor, when they had reached the foot of the stairs, "that one or other of the passkeys may be locked in the desk of their private office."

"It is possible, but not likely," was the calm reply.

At the leader's command Margaret pointed out the key that opened the door of the private office, and the desk at which the Bangshaw Brothers generally sat, one facing the other.

A small jet of gas, commonly used for melting sealing-wax, was then lighted; a bag, containing a number of house-breaking implements, swathed in thick folds of flannel, was next produced; and the desk drawers were speedily forced open and searched. But no key was to be found.



SHE WAS AROUSED BY THE SOUND.

The leader consulted in whispers with his companions a moment, and then requested Margaret to point out the key that opened the top cellar door, saying that they would have to burst open the lower one. She indicated the proper key, when he resumed:

"I must compliment you on your sensible conduct in this affair. Now, however, you must excuse me if I am compelled to make you a prisoner for awhile. Dear friend, the card."

The last words were addressed to the masked woman, who up to this time had been a mere looker on, but who now started into sudden activity.

She placed Margaret with her back to a large iron pillar which supported the ceiling, and then, producing from some hidden pocket a coil of long, thin cord, she proceeded to tie Margaret firmly to the pillar.

Her arms were left at liberty till the last, when they were bound together at the wrists with a band of some strong woven stuff, which held them as securely as if they had been riveted there.

"You see, I could not cause you unnecessary pain," said the courteous burglar, when all was made fast; "and to have fastened your arms down to

THE APRIARY.

Humming.

It is not too late now to feed for brood rearing.

The unsound fruit is what the bees like. They are able to get at it and suck the juice. Sour fruit is too hard for them to puncture.

Pollen is the substance bees carry on their legs, and which is often mistaken for wax. This is gathered for the purpose of feeding the young.

The Illinois Legislature has at last appropriated \$3,000 for the use of the State Beekeepers' Association to give an Exhibit at the World's Fair.

By feeding the bees heavily on honey or sugar syrup wax may be produced in large quantities. It is a natural secretion of the bee, being produced by the

BALLS OF FIRE

hurled into the ranks of an army could not have created the excitement and dismay that our

MURRAY \$55.95 BUGGY \$5.95 HARNESS

What has been the result of our four years' work in reforming the Buggy and Harness business?

The result is simply this that to-day our name is known throughout the country.

Our CHICAGO Buggies and Harness are more widely used than any three makes in the whole country.

Our CHICAGO Harness is the best in the world year to year, until now we have the best facilities for serving our customers of any factory on the

we produced, we would be eminently successful.

WEIVE OUR FIGHTING CLOTHES ON!

The support we have received from all parts of the country fully warrants us in

our past glorious success. All people except fools have enemies, and we have ours.

Our CHICAGO Buggies and Harness are more widely used than any three makes in the whole country.

We were not a most dangerous weapon, but we have the best.

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Established - - - 1819.

74TH YEAR.

THE AMERICAN FARMER.
"O fortunatus natus tua si bona ventur agricola."—Verg.

Published semi-monthly at Washington, D. C., and Baltimore, Md., by

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TERMS OF SUBSCRIPTION.
ONE YEAR IN ADVANCE. - - - 50 CENTSWrite for special inducements to club readers.
Advertising rates made known upon application.* Our readers will oblige us when writing
to parties advertising in the paper if they will
state that they saw the advertisement in THIS
AMERICAN FARMER. This is little trouble and is information
wanted by the advertiser.* When sending in subscriptions specify
whether for Northern or Southern Edition.
Unless specially directed for the Southern Edi-
tion, all subscriptions will be entered for the
General Edition.TO ALL TO WHOM THIS PAPER
SHALL COME. Greeting: This paper is sent you that you may

have an opportunity to see it and examine it, with a view to subscribing. We ask you to compare its contents, objects, and price with those of other papers, and see if you do not come to the conclusion that you ought to have it; that you cannot afford to do without it. We can assure you that if you send in your name for one year that you will find it one of the most profitable investments that you can make. We hope to make and keep it so interesting that you will think that every number more than repays you for the subscription price for a year. Please call your neighbor's attention to the paper.

A FREE TICKET
TO THE
WORLD'S FAIR.

All the readers of THE AMERICAN FARMER want to go to the World's Fair at Chicago, and we want to have them go. We will do more—we will give them solid help to get there. All we ask in return is that they should do some work in pushing the circulation of THE AMERICAN FARMER among their friends and acquaintances. This will be easy, for the paper is so good, so cheap, and so generally acceptable that it scarcely requires more than being brought to the notice of practical farmers in order to secure their subscriptions.

Our proposition is this:

We will give a first-class round-trip ticket from any point in the United States to Chicago and return for a club of subscribers, proportionate to the distance the point is from Chicago.

This ticket will be for the most direct route between the two places, and it will have all the advantages in regard to the time for which it will be good, length of stay in Chicago, speed of trains, etc., that any first-class ticket will have. In brief, it will be the best kind of a ticket, which will be a great superiority, as there will doubtless be many tickets offered by various parties which will be only for very slow trains, inferior cars, limited as to time, etc. Our tickets will all be for first-class, fast trains, and have every privilege given the best class of tickets.

The carrying out of this scheme involves an immense amount of correspondence and clerical work on our part, and we are now preparing a schedule of the sizes of clubs which we will require from different points. We will publish this as soon as completed, which may be some time hence.

In the meanwhile, those who intend to work for these tickets should begin at once. They can send in their subscribers as fast as they obtain them, notifying us that they are for a "World's Fair Ticket," and they will be properly credited to them. If they afterward change their minds they can have the subscribers sent in applied on any other premium that we offer.

We should very much like to have those who expect to get up clubs for these tickets write to us immediately of their intentions, as this will help us in making up our schedule. We will send them any number of sample copies they wish to show friends and acquaintances in the work of soliciting subscribers.

Remember, all names sent to count on this offer must be yearly subscribers at 50 cents each. No subscriptions sent prior to April 1 will count on this offer.

We ask all our friends who want to go to Chicago to go to work at once. They can easily secure a round-trip ticket by a little work in pushing the circulation of THE AMERICAN FARMER. Mail all communications "World's Fair Ticket," and address

THE AMERICAN FARMER,
1729 New York Ave.,
Washington, D. C.

THINK AND ACT AT ONCE.

Farmers, we will send by return mail to every subscriber who shall send us in another yearly subscriber before July 1 a pound bag of rape seed—the best forage plant in the world. This will be sent, postpaid, to any address in the United States. Anyone not now a subscriber can get a bag of the seed by sending us in his own name and another one for a year.

This is a very great opportunity, and should be improved at once.

PLANT RAPE.

We counsel our readers in the northern half of the United States to plant rape as a forage plant. Where the ground is suitable for it, it has no superior, and doubtful if any equals. It can be put in from now until early in July, and make splendid feed for sheep, cattle, and swine. How far south it will do well is a question, but there is reason to believe that on proper soil it would be very valuable all over the South, and furnish an abundance of green food far into the Winter. Its property of ripening in cool weather makes it particularly desirable. It would be well for our Southern readers, as well as Northern ones, to try the experiment, as it can be done at little cost. Let them select a good piece of land from which they have cut wheat, oats, rye, or other crops, and seed it down to rape, as they would to turnips. We risk nothing in saying that in most cases they will be surprised and delighted with the results. Rape is one of the chief reliances of the farmers in England and the north of Europe generally. It is doing splendidly for the Ontario farmers, and it is amazing that the farmers of this country have paid so little attention to it. THE AMERICAN FARMER was the first paper to call it to the notice of our people, and the general interest taken in the matter, as well as our certainty that its cultivation will prove a most profitable addition to the resources of our farmers, leads us to continue to press it upon their attention. We feel positive that every man who has any stock to pasture, especially sheep and bees, should give rape a trial this season.

THE AMERICAN FARMER has secured a small quantity of the seed—imported from England—for the benefit of its readers. We will send a small bag—containing about one pound—to every present subscriber who will send us in an additional yearly subscriber before July 1. Or, if anyone not now a subscriber, will send us his own name and another one, both for one year (50 cents each), before July 1, we will send him a pound bag of rape seed. If sown in drills this will be enough to seed from half an acre to an acre. If sown broadcast, from one-third to one-fifth of an acre. This will be enough to try the experiment, and we are sure that nine out of 10 who do so will be enthusiastic rape growers next year.

This matter should be acted on at once, as there is but a limited quantity of the seed to be had this side of the Atlantic.

THE MEETING OF CONGRESS.

COST OF CONVICT LABOR ON ROADS.

Mr. H. T. Groom, editor of the *Industrial American*, of Lexington, Ky., has been investigating the cost of convict labor with reference to road improvements. He finds that the cost to the contractor of convict labor in Georgia, where the convicts are employed in sawmills, mines, etc., in squads of from 50 to 100, is about \$12.50 a head per month for feeding, clothing, guarding, transportation to and from jail, etc. Where the convicts are employed upon railroads, and have to be moved frequently, the cost runs up to \$15 a month. In Arkansas, where the contractors have been employing convict labor for over 10 years, the cost of feeding, guarding, clothing, etc., is only \$5.35 a month per head. They are usually employed in squads of 30. Where the squads are smaller the cost is greater. Mr. Groom assumes that the average cost is about \$9 a month.

DO YOU KNOW THAT SHEEP DO NOT PAY?

Without any special purpose in keeping sheep, or with no definite knowledge of the best breed for the purpose; without knowing how to select, breed, and manage sheep for the results desired, how can anyone say that sheep are a failure?

After dogs, parasites internal and external, accidents and misfortunes that come to badly-managed flocks; after starving the flock when nature fails to give plenty of summer grass and winter feed, is it any wonder if fleeces are light and brittle; if the lambs are few and stunted; if the wethers do not bring as much price as somebody else.

No; sheep are not a failure, so long as painstaking, industrious, frugal men make money out of them.

Usually, it is the shabby, careless, rough-and-tumble farmer that does the complaining. Make note of this and tell us if we are not talking straight to the point.

Get up a Club for THE AMERICAN FARMER.

THE ARBOR DAY MOVEMENT.

The annual report of the Secretary of Agriculture for 1892, now in press, contains a statistical table, compiled in the Division of Forestry, which presents a complete account of the progress of the remarkable Arbor Day movement in our country. This, as is well known, was originated by Secretary Morton, and he is gratified by the showing made in this compilation, prepared several months before his accession to office and without his knowledge. We condense from its statement the following items:

Arbor Day was instituted and first observed in April, 1872, in accordance with a resolution of the Nebraska Board of Agriculture, formulated and introduced by Mr. Morton. Its observance was quickly followed by other States, especially those deficient in trees, and it has now extended to every State, except Delaware and Arkansas, and to every Territory, except the Indian Territory and Alaska. It has also passed the Atlantic and gained a foothold in Great Britain, France, and in other portions of the Old World, and lodgment upon the islands of the seas.

The day is established by law in 30 States. In others it has been recognized only by usage or by boards of education, village improvement societies, and other like agencies. In several States it has been made a legal holiday, while in all, or nearly all, it has become a holiday for schools.

In 1882 the public schools were invited to participate in the observance of the day, and thus it has come to have an important educational influence, cultivating a tree sentiment, as it may be called, which promises to raise up soon a generation that will be lovers and protectors rather than destroyers of the forests. Patriotic sentiment is also greatly stimulated by the Arbor Day exercises of the schools. State and County Superintendents of Education have shown much interest in Arbor Day, and the National Education Association passed a resolution last year recommending its universal observance. Reports of the number of trees planted are very incomplete, but it is known that it reaches into billions. Several millions of trees were planted April 22, 1893, in Nebraska alone. April 22 is Secretary Morton's birthday. In Texas, Alabama, and Oklahoma, February 22 has been adopted as Arbor Day. The observance occurs most frequently in April, though in many of the States the date is variable, depending generally upon the action of the Governor or the Legislature, and sometimes of the Superintendent of Public Instruction.

THE MEETING OF CONGRESS.

The rumor goes now that the President will call Congress together in August, instead of the early part of September, as has heretofore been believed to be his intention. If this be so, then the fight for farmers' rights will come on that much earlier. The farmers generally should awaken to the fact that this is inevitable. There is going to be a general assault all along the line on all legislation for the benefit of farmers, and particularly on that for the protection of wool, tobacco, eggs, fruit, hay, barley, rice, beans, pens, broom corn, cabbages, honey, hops, onions, flaxseed, straw, oats and oatmeal, apples, nuts, peanuts, flax, tow, etc. The manufacturers, importers, and all the various other interests are going to aid and abet the assault, partly to save themselves by having the reductions made on other things than their products, and partly to secure cheaper farm products for themselves. They will equip themselves strongly for the conflict and spare neither money nor influence to win.

THE AMERICAN FARMER is here to fight them in their designs upon the farmers. Its mission is to see that the farmers of the United States have fair play in Congress and in the various departments of the Government. It is incorrigible and not to be frightened off. It will fight to the end for everything that the farmers should have, expose their enemies and false friends, and keep its readers fully informed as to all that is being done, or contemplated, affecting their interests.

The farmers greatly need such an organ in Washington, and they should rally to its support, that it may be able to speak in the name of all the millions who draw their living from the soil. The paper is very cheap, and every man can well afford to take it.

DO YOU KNOW THAT SHEEP DO NOT PAY?

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After dogs, parasites internal and external, accidents and misfortunes that come to badly-managed flocks; after starving the flock when nature fails to give plenty of summer grass and winter feed, is it any wonder if fleeces are light and brittle; if the lambs are few and stunted; if the wethers do not bring as much price as somebody else.

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THE FUTURE OF THE SHEEP BUSINESS.

Every country in a sheep husbandry suited to its soil, climate, and the wants of its people. This has been true of all industrious nations of the world. As the industries and civilization of a people have undergone a change, their sheep husbandry has kept pace with those evolutions of the wants of the people and of agriculture. These alterations or adaptations always follow, but never precede, the demands of civilization, and always are in accord with the agriculture of the people. The sheep husbandry of this country is no exception to the rule found with other nations and in all histories of the industry. It is not necessary to say now what has been the matter, who have having a hard time, and who have no grounds of complaint. A few years ago there was a good deal of mystery, a good many inquiries as to the sort of a sheep was wanted, a sheep that suited the farmers. It was found that wool growers were dissatisfied, and that mutton quantities, whether in a Merino or a Southdown sheep, gave satisfaction. The increased demand for mutton and the increased attention to breeding for mutton decreased the dissatisfaction proportionately. The question would naturally be asked, Why do not all flockmen turn their attention toward mutton? This is a hard question, involving bad teaching, bigotry, prejudice, and ignorance. A great many men have hair growing out of their ears, indicating fixedness of purpose, stubbornness, qualities that make men martyrs, whether for conscience sake or the merest trifles. Such men would cut off their nose to spite their face; they would rather quit the business than change to the class of sheep that suits the demands of the markets; that has given prosperity to farmers at a time when wool was low; that has given confidence when the wool business was shrouded in despair.

THE AMERICAN FARMER would not say to all sheep raisers convert all flocks into mutton flocks; it would not ignore the fleeces and give all attention to the carcasses. Some of the breeders of British mutton breeds are doing this, both in this country and in England, but it is questionable practice, as we think. The mutton industry in this country may follow English precedents, as has been attempted for nearly a century; or, it may more nearly resemble the pattern of France and Germany, in which the Merino blood predominates; or, it may, with that independence known as a characteristic of the American people, follow natural conditions, as are always safe guides, and establish an American system, an agricultural mutton sheep husbandry, that shall be suited to American agriculture.

It is the intention of farmers to continue the raising of wool as the prime object in keeping sheep. THE AMERICAN FARMER would insist upon the Merino sheep for this purpose. If is the wish to raise sheep for mutton, there should be selected a breed, or a cross would be preferable, that could meet the intended grade of the product and the market to be supplied. The grades of mutton may be classed: House lambs, for Winter and early Spring; Spring lambs, to be sold when eight to 12 weeks old; lambs to be sold in early Fall; lambs to be fed and marketed, say at Christmas, or when one year old. It is the practice with some farmers to bring three and four lambs at a birth, all well formed and on foot! But nature gives the sheep but two teats. Two are yearlings. I have eaten mutton, but no dog or horseflesh. I prefer the mule-meat to the Longwool mutton.

Breeding sheep to raise horns depends upon the market. I am not in that line, but I don't believe that it is good for the best points, and is too small in weight.

The Shropshires and other Downs, mixed breeds, get their good qualities from the Southdowns. I prefer the gold to the adulators.

The Longwools are heavy feeders, delicate, and well enough for such manufacturers as want to supply the "fuds" of silly women. But this wool is not so warm nor so lasting in wear as that of the Merinos. But the Longwools are unfit for human food when even men are able to buy better. Horseshoe, mule-meat, and dog are eaten nowadays. I have eaten mule-meat, but no dog or horseflesh. I prefer the mule-meat to the Longwool mutton.

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Altogether, the mutton test is one of the most interesting features on the grounds for dairymen to visit even at this time, although it is a small item to the exhibit which is to come after awhile. In fact, the cows are not considered to be on exhibit, and only those specially interested are admitted to the grounds, and practically no one at all except the officials in charge, at milking time.

The cheese test will be concluded at the end of this month, when the grand butter contest begins, which will continue 60 days.

—B. A.

COMPLIMENTS.

I have received your paper and like it very much—ELDENE TEIPENING, Jefferson, N. Y.

I take THE AMERICAN FARMER, and I think it is the best agricultural paper in the world.—JAS. A. RANKIN, Bannam, Ga.

I like THE AMERICAN FARMER and want to be considered a regular subscriber. I will do all I can to extend the circulation in this part of the State.—T. G. ADAMS, Allegan County, Mich.

I have been taking THE AMERICAN FARMER, and think it is an unusually valuable paper. I find the sheep and wool department particularly good.—T. N. PERRIN, Norwood, Iowa.

I have received a copy of THE AMERICAN FARMER. I have looked it over very carefully, and find it a first-class farm and stock paper, and inclose my name to your subscription.—NICK DAHNEBORG, Dodge County, Minn.

I find that THE AMERICAN FARMER has a very large circulation. It is the best agricultural paper I know of, and I will help extend its circulation in this section of the State.—F. W. McCLELLAND, Rutherford County, Tenn.

In my estimation THE AMERICAN FARMER is the best paper in the Union for the farmers to take. I don't see why it is that every farmer in the country does not take it. The watch you give is worth at least double what you ask for both, and the paper is certainly worth much more than the price. It is such a valuable educator for the farmers, and farmers must have education if they succeed. I hope that every farmer in this land of ours will soon be on your subscription list.

—W. H. COOPER, Gun Neck, N. C.

What They Think of the Watch.

W. H. W., Moma, Kan.: I like the watch and will do all I can for it.

Lizzie Garlow, Ashtabula County, O.: I received your watch and am well pleased with it.

C. L. Fowler, Ind.: The watch I received is all right and is a good timekeeper. It is much better than I expected.

I. R. A., Germanian Hall, N. Y.: I received the watch all right. Much pleased with it. It keeps good time. Send the paper right along.

Willie Hause, Nebraska: I received your watch all right. It has kept good time so far, and I am very much pleased with it for the price.

A. Stevens, Putnam County, N. Y.: I received my watch April 2 all right, and in good running order. I like it very much. It is worth twice the amount I gave.

A. F. M., Scotland, Ill.: Watch came to hand in due time. I am well pleased, indeed,

OUR GREATER CONGRESS.

Brief Discussions of Matters of Interest by the Farmers of the Country.

James Addison, Elk County, Kan., says that the May report of the Kansas State Board of Agriculture is not very cheerful. Last Fall 3,914,846 acres were sown to wheat, and 1,576,450, or 40 per cent. of the total, or 63 per cent., or an equivalent of 38 per cent. of the entire area is still in wheat in the State. The wheat in the section of the country seems to be better than in the northern section of the State, but the farmers around him do not expect to harvest much over half a crop. A little over three-quarters of the average acreage was sown to Spring wheat, and the condition of that is 61 per cent. Oats are not of the best, on account of the weather, and the average for them throughout the State is equal to that of Spring wheat. Corn planting has been in progress throughout all portions of the State. In the southern Counties corn was reported nearly all planted on the last of April; in the central Counties about one-half, and in the northern Counties but little planted. Weather conditions being unfavorable, its germination and growth are necessarily slow. Peaches, out of the same southern Counties, are reported, for the most part, seriously damaged throughout the State, and a light crop is expected. Apples and cherries are reported damaged to some extent, but there are still prospects for a fair crop of each. There are some chin chin bugs reported, but no damage done, because of cold weather. The season is very backward, and conditions are unpromising at the date of report.

Henry Jones, Jackson County, Kan., says that from all indications the wheat crop of his State will not exceed one-third of a crop. The newspapers contain reports stating that the grain dealers place the total yield to be about 30,000,000, while there are many who do not think over 20,000,000 bushels will be harvested. Last year the crop was 75,000,000 bushels, and compared with the estimated crop of this year, there is quite a difference in yield. In the central portion of the State, where the greater part of the wheat is raised, farmers have almost given up the idea of getting a crop. It is not thought that enough wheat will be secured to sow the next year's crop. In the last 150 miles of territory in the central West, including Ellis, Gove, Trevo, Logan, Wallace, Greeley, Wichita, Scott, Lane, Ness, Rush, Rooks, Graham, Sheridan, and part of Thomas County, wheat lies in the ground unharvested.

J. H. B., Mendocino County, Cal., says that the sheep raisers in his section are having a hard time with the coyotes. The animals were always pestiferous, but the present season they have broken all previous records in the destruction of ewes and Spring lambs. It is estimated that they have killed 50 to 60 per cent. of all the lambs on the range, which represents a very large sum. The destruction of coyotes has also been enormous. The sheepmen grew desperate and raised their previous \$100 head 100 per cent., which, with the \$6 County bounty and the \$5 State bounty, made coyote traps worth \$31. This brought into the field a stranger named Chester Ayres, with a preparation of his own compounding. Over the range Ayres buried his traps, with a perfume which he uses for bait. In the past five weeks he captured 46 traps, which makes it very profitable for him.

Dr. W. O. B., Macomb, Ill., says that he has been interested for some years in the importation and propagation of a species of game bird called the chukor partridge, and has scoured from the Old World a number of these birds, which have been turned loose to multiply in the state of Illinois. Recently the vice-consul general of the United States Consular Agent at Karaikal, India, three more crates of chukor partridges. The birds will be turned loose next year. The chukor partridge is considerably larger than the American quail, and about the same color as the guinea fowl. The bird is a native of the Himalayas, and is common in Persia and Arabia.

James Hendrickson, Belmont County, O., says that a peculiar superstition exists with a certain farmer in his vicinity. John Patterson, the farmer in question, was the owner of a horse which two years ago was very badly swelled. He consulted an old fortune teller, and for the sum of \$1 he told him how to cure the horse. The money was paid over and the woman made a small incision in each shoulder and placed therein a silver 10-cent piece. Strange to say, the animal soon recovered, and although two years have elapsed it has never had a recurrence of the trouble. The money can be readily located by passing the hand over the horse's shoulder.

James Leland, Vickburg, Miss., says that the cotton crop in his vicinity is very bad off. The weather around the 1st of April was very warm and pleasant, and plenty of cotton was planted. During the middle of the month there were very heavy rains, followed by cold weather, and this change of temperature has seriously affected the cotton. Much of it is now dying. Its appearance is sickly, and remaining will be necessary in many instances, especially in cotton planted just prior to the recent rains, which is rotting in the ground. Seed for replanting is scarce and very high.

David T. Pritchard, Rayville, Ind., writes: Your paper is the most thorough, practical farm paper that reaches central Indiana, and gives the practical experience and reports from our whole country. I will correspond from the gas belt. Spring is opening up beautiful at this writing, April 4. Fruit trees are in bloom and some gardens have been made. Potatoes mostly planted. Wheat never looked better. Oats, rye, and barley looking well for this date. Grass taking fine start, and stock looking well.

Axel Jorgensen, Wright County, Minn., says that it has been his desire to work for the spreading of such a paper as THE AMERICAN FARMER, as it tends to make the farmer wiser, and sets him thinking that it is not enough to know how to cultivate the soil, but also to know how to put an even price on all products, thereby preventing his fair share of falling into the already plethoric coffers of the millionaires, as is the case now. He takes pleasure in working for those that work in the interest of him and his fellow equals.

Daniel Norten, Columbia County, N. Y., says the only way he knows of to get rid of the Canadian thistle is to plow it 12 to 18 inches deep in May or June, during dry weather, and harrow three or four times for a few days. This will bring up the cross roots and that is the last of them. In pastures they want to cut twice a year before blossoming and that will kill them. It is of no use to cut them after they bloom, for the seed will ripen and the pest will spread as rapidly as though it was not cut.

Your paper is a boon to any country, and I wish I could get it in every family in our (Jackson) County. We want this kind of reading among our wool growers, but they raise the sheep here without any education. The first spare moment I have I will write you a short letter for publication on wool growing in the South. I am 83 years old, and was back 40 years and seen such an opportunity as is presented here I would show the boys what could be done.—WM. SIGERSON, Ocean Springs, Miss.

T. G. Adams, Allegan County, Mich., says that he finds it a good way to raise nothing but the best. He has some choice Poland-China pigs and finds that they sell well when good pigs are put up. All his stock is registered in the Ohio Poland-China Record.

Tired, Weak, Nervous,

Means Impure, Impoverished Blood. The

Nerves Must be Fed by Pure Blood

Therefore

HOOD'S SARSAPARILLA

Is the Best Medicine to Take,

Because It Is a Wonderful

Blood Purifier, Nerve Tonic and Strength

Builder

Beyond Comparison

Where in the wide field of medicine is there a preparation which can for a moment stand comparison in the strong sunlight of marvellous cures, actually accomplished and on record, with Hood's Sarsaparilla? We have a larger number of honest, voluntary

Testimonials

On file than all other proprietary medicines combined. And these testimonials are not purchased, nor are they written up in our office, nor are they from our employees. They are plain statements of facts, and prove beyond question that Hood's Cures. Hood's Sarsaparilla purifies, vitalizes and enriches the blood, and this is the reason why

Nervous People

Find strengthened nerves and sweet, refreshing sleep by taking it. The strong point about the cures by Hood's Sarsaparilla is that they are permanent, because they start from the solid foundation of purified, vitalized and enriched blood. Hence there is nothing fictitious about the sleep and strength secured by taking Hood's Sarsaparilla, as is the case when poisonous narcotics, sleeping potions and stimulants are resorted to. Irritability, Nervousness, loss of strength, loss of sleep, loss of appetite all disappear when Hood's Sarsaparilla is persistently taken, and

Strong Nerves, Sweet Sleep,

Strong body, sharp appetite, and in a word, Health and Happiness, follow the use of Hood's Sarsaparilla. This is the reason why the sales of this excellent medicine are doubling this year, and far exceed that of any other sarsaparilla or blood medicine.

Feed Your Nerves On

Pure blood, and all your troubles and ill health will disappear. Hood's Sarsaparilla makes

Pure Blood.



Mrs. Emma Huse
Reepsville, N.C.

Nervous Prostration.

Years of Suffering Ended by Hood's Sarsaparilla.

Appetite, Health, and Strength Restored.

"Reepsville, Lincoln Co., N. C., Feb. 3, '93. 'Gentlemen: I have been suffering with lung trouble for 18 years. I caught cold easily and it settled on my lungs, causing a dreadful cough and difficult breathing. I also suffered from bronchitis, loss of health, loss of appetite, and suffered from nervous prostration. While confined to my bed I read of Hood's Sarsaparilla in a little pamphlet, and sent nine miles for a bottle of the medicine. After using it three

days my voice became natural, my nerves became quieted and I regained an appetite. In a short time I was able to walk, and before taking two bottles was attending to my household duties. I am now as well as ever, and my general health is better than it has been for years. I cannot praise Hood's Sarsaparilla enough."

"I would also add my testimony in favor of Hood's Vegetable Pills. I have used several different kinds of pills and I know by experience that Hood's are by far the best. They are so mild and do not bring on that sick feeling that follows the taking of some kinds of pills, and leave the stomach in a healthy condition. We will not use any other pills in our family as long as we can get Hood's. They may also be used with safety by the most delicate people." Mrs. EMMA HUSE.

"I want to say a few words in praise of Hood's Pills. They are mild, no gripes, leave the head clear and free from aches. I recommend them to all. I will use no other as long as I can get Hood's. They are the best on the market." LIZZIE RIDGE, Hopewell, Chester Co., Pa.

"I cannot tell the benefit myself and others have received by using Hood's Sarsaparilla and Hood's Pills. They are the best medicines that can be kept in the house. I had suffered much from distressing pains in my stomach, especially aftereating. Perspiration would burst out over my body even in the cold months. The doctor said I had a weak heart. My husband had Hood's Sarsaparilla advised him, which I decided to try it. I derived great benefit from it. My mother has also taken it with beneficial results. We shall recommend Hood's Sarsaparilla whenever the opportunity presents itself." Mrs. E. MORRIS, Dupont, Pa.

Constant Companions.

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"I might write more in praise of Hood's Sarsaparilla, and then tell all I know of its goodness, by my own experience. We have taken it in our family, from time to time, for about four years, always with good results. I have great faith in Hood's Sarsaparilla, and take great pleasure in recommending it to others." Mrs. NETTIE BILLINGS, Box 44.

That Tired Feeling.

Limbs Seemed to "Weigh a Ton."

Health, Strength, Vigor, Given by Hood's Sarsaparilla.

"I am always ready to speak a good word for Hood's Sarsaparilla, as one should. I have used it for a year, and always keep it in the house. It has been of great service to me for kidney trouble and all sorts of trouble."

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AMATEUR DUCK RAISING.

The Critical Period, When the Eggs Begin to Pip and the Ducklings Appear.

V.

Much could be said regarding the testing of eggs—the different stages of the developing, rudimentary structure, the phenomena attending the growing embryo as it approaches completion, when the heart is formed, when the alimentary canal, etc. All this is naturally interesting, but complex and puzzling to the novice. It is a matter more deserving of treatment in comparative anatomy than here. For testing eggs you need only a common lamp that gives a good light, but a tiny reflector will facilitate the operation. At the end of three days hold the egg directly in front of and slightly above the blaze. Look diagonally down through the egg at the light, rolling the egg slowly at the same time. If a wavy ellipse about three-fourths of an inch in diameter appears floating on the top, the egg is sure to be fertile; if, on the contrary, the egg is perfectly clear and transparent, it is infertile. Save all infertile eggs for use or to sell. They cannot be distinguished from fresh laid ones. Do not confound the dark spot with the yolk, which presents a golden appearance.

At the end of six days it is desirable to remove all embryos that from lack of vigor have died during this time. You must not neglect to do this, for this reason: a dead embryo has only the heat it receives, while a live one gives out several degrees of animal heat, and therefore has a much higher temperature. Your thermometer on a dead embryo might register 103 degrees, while the actual heat of the live ones might be even 108 degrees. Remove all eggs that have made no advancement since you first tested them. Another kind of embryo is hard at times to tell accurately. The wavy lines around the embryo move apart from the embryo itself when the egg is slightly agitated, forming a narrow, fluctuating ribbon of gray outside a lighter shade that begins to appear between this and the embryo itself. This dark ribbon trembles exceedingly and shows a decided inclination to break and mix with the other contents of the egg. Most of these dead embryos have a "cold feel" to the touch. Always test as quickly as possible and return to the machine at once. Practice alone makes perfect in the matter of testing.

Duck's eggs are perfect in Spring. I have often found 98 out of 100 fertile. It is important that we should consider the time of hatching. Just before the ducklings break the shells the thermometer in the different trays show a slight tendency to rise. This extra caloric is generated by the movements of several hundred birds as they exercise and strengthen their energies preparatory to pipping the shell. I do not myself think that the bird has at this time a formed idea that it will break its imprisonment as soon as it has sufficient strength. On the contrary, it is my belief that the yolk and the white having completed their progressive chemical combinations, the vital forces are fully established and are now dependent upon a constant outside supply of oxygen for the support of animal combustion. This combustion, slow at first, becomes more definite, and as the respirations grow deeper a constant tapping of the bill against the shell can be heard, caused by the bird rising and falling with the breast, and not by the duckling consciously struggling to get out.

Continual Molting.

EDITOR AMERICAN FARMER: Can you tell me the reason of my chickens molting? They have a flock of White Brahmas and miss soon to get the new ones to begin shedding again. They have been doing this for the last five or six months. They seem to be in the best of health and lay well. I have other breeds, but they do not shed as often as the Brahmas. I have 25 of the last-named breed, and some of them have hardly any feathers. —B. T. CROSS, Delta, Colo.

This is something we never before heard of. It is quite natural for a hen to molt once a year, but shedding so often as our correspondent's hens and laying well is something unusual. We think that the whole cause is in the feeding of a one-sided ration; that is, food containing too much nitrogen. No hen will begin to molt until she has a store of nitrogen on hand, as this is an important factor in the formation of feathers. If the feeding is looked after the trouble ought to cease. We should like to hear the views of some of our readers on the subject.—EDITOR AMERICAN FARMER.

Going to the World's Fair?

If you are, go via Cincinnati and the C. H. & D. and Monon. The superb train service of this line between Cincinnati and the "World's Fair Route." It is the only line running Pullman Vestibuled trains with dining cars between Cincinnati and Chicago. The C. H. & D. have issued a handsome panoramic view, five feet long, of Chicago and the World's Fair, showing relative heights of the prominent buildings, etc., which will be sent to any address, postpaid, on receipt of 25 cents in stamps. Address, E. O. McCormick G. P. & T. Agt., "World's Fair Route," 300 West 4th Street, Cincinnati O. Be sure your tickets read via Cincinnati and the Cincinnati, Hamilton & Dayton R. R.

Cacklings.

Kerosene and whitewash are valuable adjuncts in the poultry business. Especially at this time of the year, they are very valuable.

Turkeys until they "shoot the red" should be well cared for. After that period they are perfectly able to take care of themselves.

The Pekin duck is a profitable fowl. If it were not Rankin and other duck raisers would not keep them. At 10 weeks old a pair of Pekins should weigh in the neighborhood of 10 pounds.

While ducks and chickens may belong to the same family, there is considerable difference among them. Not only is this true in their roosting positions, but also in the manner in which they eat. The duck always prefers to eat out of a trough, not being particularly adapted to picking up things from the ground as is the chicken.

UNTOLD SUFFERING AND MISERY RELEIVED AND CURED

DANIEL J. HOPKINS.

The Messenger of Health Heartily Indorsed

A STATEMENT UNDER OATH.

MOUNT PLEASANT, MICH., AUGUST 15, 1892.

THE OWEN ELECTRIC BELT AND APPLIANCE CO.

Dear Sirs:—I am now able to say, after having purchased one of your No. 4 Electric Belts with Spinal Appliances, about one year ago, that I have been free from all my suffering for the past eight long months my suffering was intense. My stomach was so weak that I could not take any food, and I was forced to live on water for a long time. My kidneys were so weak that I could not retain my urine, it would pass from me in a few moments. I had to leave my home at night, leaving my couch from six to eight times of a night to avoid my urine, which was very painful. It was also a great while severe constipation and piles have left me at last. I have been using your former injections to produce evacuation of the bowels. It was very distressing, so much so that I had to go to a doctor, and one told me I must go to a hospital. The doctors could do me no good whatever, and I had made up my mind that there was no help to be had in the world. My limbs were become numb and trembled like ice and I would try with hot bricks, rubbing and all other methods, to restore the circulation and ease the pain, but it would not do. I would sit for hours in a chair, and the pain would pass off. Then again another attack would occur which would leave me helpless, and so on continually for a long time, and I could do no work, and that it would be three years at least before I would be able to work. I agreed with them, for I had no money to pay again. The whole world seemed to me a blank, and my vital forces had left me, so that I could not work, and the pain would pass through the loss of my life fluids, which the doctors were unable even to check. I had given up all hope of getting any help, and had given up all the forms of sustenance in the face, from which there seemed to be no avenue of escape from this living horror, of which no one could conceive. He who has suffered being as mine has done. In this state of suffering and agony I continued until about one year ago, now, when I first heard of the Owen Electric Belt. I was told by my physician, who had been helping condition, advised me to try one of the Owen Electric Belts. For several weeks down in this state of health he told me of the wonderful healing properties of the belt, and that he was so earnest and persistent that I finally consented to send for one. He sent me one of your No. 4 spinal appliance, which I did at a cost of \$30.00, which is your price for No. 4 and spinal appliance. I was never so well in my life as I have been since. I have made in my life in the way of doctor's remedies or anything else, as I had spent dollars, up to the hundreds, but could

get no relief whatever. As soon as I received the Belt and Appliance I had it charged and adjusted so that it would fit me in a short time, and I put it on I was to my great surprise and pleasure to find that the sleepless nights I had passed, unable to sleep but from one or two hours through the whole night for months, were now gone. I could sleep from the time the Belt slept until morning and awoke greatly refreshed. I was not disturbed, nor had I to leave my couch from six to eight times of a night to avoid my urine, which was very painful. It was also a great while severe constipation and piles have left me at last. I have been using your former

injections to produce evacuation of the bowels. It was very distressing, so much so that I had to go to a doctor, and one told me I must go to a hospital. The doctors could do me no good whatever, and I had made up my mind that there was no help to be had in the world. My limbs were become numb and trembled like ice and I would try with hot bricks, rubbing and all other methods, to restore the circulation and ease the pain, but it would not do. I would sit for hours in a chair, and the pain would pass off. Then again another attack would occur which would leave me helpless, and so on continually for a long time, and I could do no work, and that it would be three years at least before I would be able to work. I agreed with them, for I had no money to pay again. The whole world seemed to me a blank, and my vital forces had left me, so that I could not work, and the pain would pass through the loss of my life fluids, which the doctors were unable even to check. I had given up all hope of getting any help, and had given up all the forms of sustenance in the face, from which there seemed to be no avenue of escape from this living horror, of which no one could conceive. He who has suffered being as mine has done. In this state of suffering and agony I continued until about one year ago, now, when I first heard of the Owen Electric Belt. I was told by my physician, who had been helping condition, advised me to try one of the Owen Electric Belts. For several weeks down in this state of health he told me of the wonderful healing properties of the belt, and that he was so earnest and persistent that I finally consented to send for one. He sent me one of your No. 4 spinal appliance, which I did at a cost of \$30.00, which is your price for No. 4 and spinal appliance. I was never so well in my life as I had

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Persons making inquiries from the writers of testimonials will please enclose self-addressed, stamped envelope to insure a prompt reply.

OUR ILLUSTRATED CATALOGUE

Contains full list of diseases, out of Belts and Appliances, prices, sworn testimonials and portraits of people who have been cured, etc. Published in English, German, Swedish, and Norwegian languages. This valuable catalogue will be sent to any address on receipt of six cents postage.

THE OWEN ELECTRIC BELT AND APPLIANCE CO.

MAIN OFFICE AND ONLY FACTORY

THE OWEN ELECTRIC BELT BUILDING,

THE LARGEST ELECTRIC BELT ESTABLISHMENT

IN THE WORLD.

201 TO 211 STATE STREET, CHICAGO, ILL.

THE GARDEN.

Bean Growing.

EDITOR AMERICAN FARMER: It is not too late to plant several plots in the garden to beans for the family use. Neither is it too late to plant several acres to them if it is intended to cultivate for the money in their culture. The excellent prices which have been obtained for beans during the past few years has caused more than one person to devote space on the farm to them.

The seed will grow well enough on poor land, but the richer the soil the better will be the yield per acre. Another thing is that more seed will be required on poor land than on rich soil. Thoroughly plow the land and harrow once or twice. If the corn drill is not in use, it does very well to sow the bean seed. It takes one quart of seed to every 100 feet in drill, or two bushels to the acre. If the corn drill is used, the seeds will not only be more evenly distributed but will also have a more uniform covering of earth than when planted by hand. However, if no drill is at hand, the seed can be very well sown by hand.

The richer the soil the farther apart the seed may be sown, the distance varying from 18 inches to two feet. If the land is very poor, the seeds should be dropped about two inches apart. Two inches is depth enough at which to sow, and if the planting is done rather late, that is, after the middle of this month, it is a good plan to roll the land after sowing.

Shallow cultivation should begin as soon as the plants appear and continue until time of blossoming. After the plants begin to bloom they should not be disturbed, as it prevents their setting well. The surface should be kept level and in good tilth, as by this means the soil retains its moisture. Keep weeds down closely and do not let them get down close to you.

The seed is extremely sensitive to frost and wet, and for this reason it is useless to plant them before the land has become warm and light. It is said by some that the liability to rust is increased when the beans are cultivated immediately after a rain or early in the morning while the dew is still on the plants.—M. A. C.

Planting Strawberry Vines.

Strawberry vines may safely be planted as late as the middle of June, and if the weather is favorable, until the first of July. There is no reason why farmer may not have all the berries he wants for home use. A few square yards devoted to this berry will supply an abundance for the farmer's table. They are quite easy to raise, and vines can be bought at a very reasonable price from nurserymen. The ground should be thoroughly prepared before they are planted. If a large lot is to be planted the ground should be plowed and harrowed, then marked off into rows three feet apart. The plants are set about one foot apart in the rows. The best tool to use for this purpose is a florist's trowel. Dig the plants in a thick mud. The ground must be thoroughly cultivated and all weeds killed. Any blossoms that may appear this season should be cut off, as by bearing fruit they will do the vine far more injury than several times the worth of the fruit they would bear.

Train the vines along the row, making a thick mat from 8 to 12 inches wide. As soon as the ground freezes in the Fall cover the bed with corn fodder, straw, leaves, or swamp grass. This is not necessary to protect the plants from the cold, but to keep the ground from freezing and thawing, which does much injury to plants by exposing the roots.

Sweet Corn and Turnips.

Sweet corn will give a profit from

three distinct sources, any one of which would amply repay the farmer for the care of a field of it. An acre will furnish the family with a supply for the table, there will be several hundred dozen that may be sold, and the fodder will always be relished by the farm stock. The sale of sweet corn for the market from an acre of good land should not \$40 or \$50, after the family have used as many as they want. There is always good demand for sweet corn at fair prices. If the corn is very early, two crops may be planted, one early and the other a late variety. For early, Concord is highly recommended, and for late, Stowell's Evergreen is the best. The early variety should be planted from 14 to 20 days earlier than the late. The foddler will be ready to cut just at the time when the pastures are the shortest. The foddler may be cut and fed to the cattle as the corn is "pulled"; or, if the stock have plenty of good pasture, the corn may be cut and shocked. The shocks should be smaller than for field corn. Cattle like the foddler far better than that of the field corn. When fed to hogs it keeps them in good condition, and they can be fattened in a shorter time in the Fall. Cows fed on it give more milk than those which are in pasture. Horses which are being fed on hay will relish it. The corn is generally planted in rows, the hill being two feet apart in the rows, and containing five stalks each. The early corn may be followed by turnips and the later by rye. These crops will keep the weeds from growing and the land will be in better condition than if left idle.

Turnips are excellent for the table, the stock will eat them, or they may be sold. They seldom sell for less than 25 cents per bushel and often bring much more. The turnips should be pulled before the frost, and be stored in a cool, dry place. They are quite good for hogs or any other stock.

The world's supply of wheat and flour practically shows an increase the past year, a very unusual occurrence the last year. The wheat crop is about 10 per cent. larger than the last year. The average price of wheat is 90 cents per bushel, and the flour 10 cents per bushel.

Wheat—The bears of late seem to be in control of values, and say England has unusually large stocks of American flour; that American exports of flour have been much larger than ever before in proportion to wheat shipments.

The weekly Iowa crop bulletin says that the corn is practically all planted, except in localities where plowing has been delayed by excessive moisture. The acreage will exceed last year's, but is not likely to be greater than the average of former seasons. The seed is sprouting unusually well. Oats and other spring grains generally show an improvement, but there are numerous reports that the oat crop has a thin stand. The season has been quite favorable for grass seed and clover.

Clapp & Co.'s circular, of May 26, says: COTTON—Crop and weather reports have been mostly favorable, and a eight million bales are expected. We think the market is still in a waiting policy and buying from hand to mouth, and so keep prices from rising. The cotton crop is in a very favorable position, and the demand and supply of the money market is doubtless keeping some buyers out as it is keeping many from buying in. The cotton crop is in a very favorable position, and the demand and supply of the money market is doubtless keeping some buyers out as it is keeping many from buying in.

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THE MARKETS.

Review of the Fortnight.

The weekly Iowa crop bulletin says that the corn is practically all planted, except in localities where plowing has been delayed by excessive moisture. The acreage will exceed last year's, but is not likely to be greater than the average of former seasons. The seed is sprouting unusually well. Oats and other spring grains generally show an improvement, but there are numerous reports that the oat crop has a thin stand. The season has been quite favorable for grass seed and clover.

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